

CLAIMS

1. A drop ejector for ejecting discrete drops of liquid, comprising:
a plurality of firing chambers, each firing chamber having an energy dissipation device;
each firing chamber being associated with a fluid feed slot configured to supply liquid fuel to said firing chamber; and
a constricted inlet positioned between said firing chamber and said fluid feed slot, through which liquid is drawn into said firing chamber from said fluid feed slot.
2. The drop ejector of claim 1, wherein:
each firing chamber includes an outlet orifice; and
said energy dissipation device is smaller in size than said outlet orifice.
3. The drop ejector of claim 1, wherein said constricted inlet is defined by two protruding points that oppose each other.
4. The drop ejector of claim 3, wherein each protruding point is defined by a flat surface, said flat surface being substantially perpendicular to the flow of liquid fuel in said fluid feed slot, and an angled surface in said firing chamber, said flat surface and said angled surface establishing an acute angle therebetween.
5. The drop ejector of claim 1, wherein a width of said constricted inlet is smaller than a width of said firing chamber and a width of said fluid feed slot.
6. The drop ejector of claim 1, wherein said energy dissipation device is a resistor.

7. The drop ejector of claim 1, wherein said liquid is liquid fuel.
8. An apparatus for generating a combustible vapor, comprising:
a drop ejector configured to eject discrete drops of liquid fuel into an air stream, wherein said drop ejector includes:
a plurality of firing chambers, each firing chamber having an energy dissipation device;
each firing chamber being associated with a fluid feed slot configured to supply liquid fuel to said firing chamber; and
a constricted inlet located between said firing chamber and said fluid feed slot, through which liquid fuel is drawn into said firing chamber from said fluid feed slot.
9. The apparatus of claim 8, wherein said constricted inlet is defined by two protruding points that oppose each other.
10. The apparatus of claim 9, wherein each protruding point is defined by a flat surface, said flat surface being substantially perpendicular to the flow of liquid fuel in said feed slot, and an angled surface in said firing chamber, said flat surface and said angled surface establishing an acute angle therebetween.
11. The apparatus of claim 9, wherein a width of said constricted inlet is smaller than a width of said firing chamber and a width of said fuel feed slot.
12. The apparatus of claim 9, wherein said energy dissipation device is a resistor.
13. A method of generating a combustible vapor, comprising:
passing a plurality of discrete drops of liquid fuel through an air stream;
wherein each of said drops of liquid fuel is generated by heating liquid fuel in a firing chamber such that a bubble of liquid fuel forces a drop of liquid fuel to be ejected from said firing chamber through an outlet orifice, and wherein

liquid fuel is drawn into said firing chamber through a constricted inlet as a result of said bubble of liquid fuel collapsing.

14. The method of claim 13, wherein said constricted inlet is defined by two protruding points that oppose each other.

15. The method of claim 14, wherein each protruding point is defined by a flat surface, said flat surface being substantially perpendicular to the flow of liquid fuel in a fluid feed slot, and an angled surface in said firing chamber, said flat surface and said angled surface establishing an acute angle therebetween.

16. The method of claim 13, wherein a width of said constricted inlet is smaller than a width of said firing chamber and a width of said fluid feed slot.

17. A drop ejector for ejecting discrete drops of liquid, comprising:
a means for ejecting discrete drops of liquid from an outlet orifice;
a means for delivering said liquid to said means for ejecting; and
a constricted inlet positioned between said means for ejecting and said means for delivering liquid, through which said liquid is delivered to said means for ejecting from said means for delivering liquid.

18. The drop ejector of claim 17, wherein
said means for ejecting includes a plurality of firing chambers, each firing chamber having an outlet orifice; and
said energy dissipation device is smaller in size than said outlet orifice.

19. The drop ejector of claim 17, wherein said constricted inlet is defined by two protruding points that oppose each other.

20. The drop ejector of claim 19, wherein each protruding point is defined by a flat surface, said flat surface being substantially perpendicular to the flow of liquid fuel in said fluid feed slot, and an angled surface in said firing

chamber, said flat surface and said angled surface establishing an acute angle therebetween.